Amendments to the Claims

1–18. (Cancelled)

19. (New) An optical modulation converter configured to convert the modulation format of an optical input signal, the optical modulation converter comprising:

a birefringent medium having first and second main axes of symmetry and a selected differential group delay between the first and second main axes of symmetry, the birefringent medium configured to separate an optical input signal passed through the first and second main axes into two optical components such that each optical component travels along different ones of the first and second main axes at a different group velocity.

20. (New) The converter of claim 19 wherein the birefringent medium is selected based on a bit rate of the optical input signal such that the differential group delay introduced by the birefringent medium is substantially equal to a bit period of the optical input signal.

21. (New) The converter of claim 19 further comprising a polarization controller configured to cancel random polarization fluctuations in the optical input signal before it is received by the birefringent medium.

22. (New) The converter of claim 19 wherein the birefringent medium comprises a polarization maintaining fiber.

23. (New) The converter of claim 19 further comprising an optical isolator operatively coupled to an input of the birefringent medium.

24. (New) The converter of claim 19 wherein the optical input signal to be converted comprises a phase-modulated optical signal, and wherein the birefringent medium is selected such that the selected differential group delay between the first and second main axes of symmetry results in the birefringent medium outputting a corresponding polarization-modulated signal.

25. (New) The converter of claim 19 wherein the optical input signal is coupled at 45° to the first and second main axes of the birefringent medium when the optical input signal comprises a phase-modulated optical signal having a linear polarization.

26. (New) The converter of claim 24 wherein the birefringement medium comprises at least a part of a first conversion stage of the optical modulation converter, and further comprising a second conversion stage operatively connected to the output of the birefringent medium, the second conversion stage including a polarization-sensitive device configured to convert the polarization-modulated signal into a corresponding intensity-modulated signal.

27. (New) The converter of claim 26 wherein the polarization-sensitive device comprises one of a polarizer or a polarization splitter.

28. (New) The converter of claim 26 wherein the second conversion stage further comprises a polarization controller configured to cancel random polarization fluctuations in the optical signal output by the birefringement medium before it is received by the polarization-sensitive device.

29. (New) The converter of claim 26 further comprising a photodetector disposed at an output of the second conversion stage configured to detect the corresponding intensity-modulated signal.

30. (New) The converter of claim 24 wherein the selected differential group delay between the first and second main axes of symmetry is substantially equal to a bit period of the optical input signal such that the birefringent medium converts the phase-modulated input signal into an intensity-modulated, non-return-to-zero format.

31. (New) The converter of claim 24 wherein the selected differential group delay between the first and second main axes of symmetry is sufficiently less than the bit period of the optical input signal such that the birefringent medium converts the phase-modulated input signal into an intensity-modulated, return-to-zero format.

32. (New) A method of converting a modulation format of an optical input signal, the method comprising:

inputting an optical input signal into a birefringent medium having first and second main axes of symmetry and a selected differential group delay between the first and second main axes; and

separating the optical input signal into two optical components such that each optical component travels along different ones of the first and second main axes at a different group velocity.

33. (New) The method of claim 32 wherein the optical input signal to be converted comprises a phase-modulated optical signal, and wherein the method further comprises selecting the differential group delay of the birefringent medium such that a signal output by the birefringent medium comprises a corresponding polarization modulated signal.

34. (New) The method of claim 33 further comprising converting the polarization-modulated signal into an intensity-modulated signal by applying the polarization-modulated signal to a polarization-sensitive device.

35. (New) The method of claim 32 further comprising selecting the differential group delay of the birefringent medium based on a bit rate of the optical input signal such that the differential group delay is substantially equal to a bit period of the optical input signal.

36. (New) An optical signal receiver configured to detect a phase-modulated optical input signal, the optical signal receiver comprising:

a first optical signal modulation format conversion stage comprising a birefringent medium having first and second main axes of symmetry, and a selected differential group delay between the first and second main axes of symmetry, and configured to separate a phase-modulated optical input signal passing through the first and second main axes into two optical components such that each optical component travels along different ones of the first and second main axes at a different group velocity to obtain a polarization-modulated signal; and

a second conversion stage comprising:

a polarization-sensitive device configured to convert the polarization-modulated signal into a corresponding intensity-modulated signal; and

a photodetector for detecting the intensity-modulated signal.